Candida Tropicalis Arthritis in a Diabetic Patient Undergoing Hemodialysis

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Septic arthritis is caused by Candida species, and most reported cases have developed in cancer patients. Herein, we describe a rare case of Candida tropicalis arthritis in a 73-year-old woman with diabetes who was undergoing hemodialysis. The clinical condition responded well to an antifungal agent, fluconazole, and arthroscopic debridement.

Key words: candida tropicalis, hemodialysis, septic arthritis

Introduction

Invasive candidiasis has become a major type of nosocomial infection, especially in critically ill patients on broad-spectrum antimicrobial agents, and those receiving immunosuppressive agents1-3. Although Candida albicans remains the predominant cause of invasive candidiasis, the incidence of invasive candidiasis due to non-albicans Candida species including C. tropicalis, C. glabrata, and C. parapsilosis is gradually increasing4-5. The most common manifestations of invasive candidiasis are bloodstream and urinary tract infections6. Recently, another uncommon clinical entity, Candida species-associated septic knee, has emerged with most cases developing in immunocompromised patients, especially cancer patients7-12. However, knowledge about this clinical entity is limited. Herein, we describe a case of septic arthritis caused by C. tropicalis in a diabetic patient with end-stage renal disease.

Case Report

A 73-year-old woman presented with progressive painful swelling of her right knee for two days. She had a history of diabetes mellitus and end stage renal disease and had been receiving maintenance hemodialysis via an AV shunt in the right hand for three years. She denied any recent trauma or intra-articular injection. In addition, the patient denied any hospitalizations or use of antibiotics in the past three months. Physical examination did not show significant signs of inflammation such as erythromatous or swelling over the site of the AV shunt. However, we noted local heat and tenderness over her right knee. Laboratory examination showed a white blood cell count of 10400/mL with a predominance of neutrophils (94%), and a C-reactive protein...
of 215.6 mg/L (reference range, < 3 mg/L). Arthrocentesis of the swollen knee joint yielded 30 ml of purulent fluid and the analysis of joint fluid showed white blood cells 34250/ mL with 93% neutrophils. No crystals were found and a Gram stain was negative for microorganisms. Empiric treatment for pyogenic arthritis with cefazolin was prescribed. However, the condition did not improve after two weeks of antibiotic treatment. Specimens of the synovial fluid and blood did not yield any microorganisms. Therefore, she received repeated arthrocentesis, and 50 ml of turbid joint fluid was aspirated and sent for culture. Four days later, the repeated culture of the synovial fluid and two sets of blood cultures yielded *C. tropicalis*. Transthoracic echography did not show evidence of any vegetation, so infective endocarditis was not favored. Thus, an antifungal agent fluconazole (200 mg per day) was administered for septic arthritis and fungemia caused by *C. tropicalis*. Arthroscopic debridement was done for her septic knee, and the synovial tissue still grew *C. tropicalis*. Thereafter, the local condition of the right knee gradually improved, and she was discharged on oral fluconazole.

**Discussion**

Most septic arthritis is caused by bacteria, and *Staphylococcus aureus* is the most common pathogen. In contrast, fungal arthritis is extremely rare. Here, we documented a rare case of *C. tropicalis* septic arthritis, and provided several significant findings. Our case reminds physicians to be alert to the possibility of *Candida* arthritis in the setting of septic arthritis with a poor response to antibiotics. In our patient, the local condition of the septic knee did not respond to prolonged antibiotic use initially. Causes of nonresponse to antibiotics could have included inappropriate use of antibiotics, lack of adequate surgical drainage or debridement, and the underlying immunocompromised condition. The main reason was probably that the pathogen, *Candida* species, was not discovered early.

Our patient’s underlying immunocompromised condition, with diabetes mellitus and end stage renal disease predisposed her to invasive candidiasis. Kathresal et al reported a case of *C. albicans* septic knee in a hemodialysis patient, and De Clerck et al reported a case of Candida parapsilosis causing a septic wrist in a patient receiving chronic hemodialysis. Our case is the first reported case of *C. tropicalis* septic knee in a diabetic patient undergoing hemodialysis. Most cases of septic arthritis caused by this pathogen have been reported in cancer patients, especially patients with hematologic cancers and bone marrow transplant recipients. Clinicians should consider invasive candidiasis in patients with immunocompromised conditions such as cancer, diabetes and end stage renal disease.

In conclusion, Candida arthritis was formerly considered a clinical entity in critically ill patients, but it can also occur in mildly immunocompromised patients such as diabetics receiving hemodialysis.

**Conflicts of Interest:** None

**References**

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洗腎的糖尿病病人感染熱帶假絲酵母菌關節炎

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酵母菌引起的敗血性關節炎最常見於癌症病人。此次我們提出一例罕見洗腎糖尿病病人，因熱帶假
絲酵母菌引起關節炎，經由關節鏡及抗黴菌藥物治療後臨床反應良好。

關鍵詞：熱帶假絲酵母菌，血液透析，敗血性關節炎